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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,945	02/04/2004	Peter J. Fricke	200310842-1	5316

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EXAMINER

NADAV, ORI

ART UNIT PAPER NUMBER

2811

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/772,945		FRICKE ET AL.	
	Examiner		Art Unit	
	Ori Nadav		2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) 2,12-15,17-25,36,37,42-46 and 50-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-11,16,26-35,38-41,47-49 and 55-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/4/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of the embodiment of figure 3 in the reply filed on 8/11/2005 is acknowledged.

Applicant's election with traverse of Group I in the reply filed on 8/11/05 is acknowledged. The traversal is on the ground(s) that although groups I and II are patentably distinct they are not independent and examination would not cause an undue burden on the examiner because both groups include an SRO material. This is not found persuasive because examination of two patentably distinct inventions does cause an undue burden on the examiner even though both groups include an SRO material.

The requirement is still deemed proper and is therefore made FINAL.

Applicant's election with traverse the embodiments of figures 2-8 over the embodiments of figures 11 and 14-15 in the reply filed on 8/11/05 is acknowledged. The traversal is on the ground(s) that although the embodiments of figures 2-8 and the embodiments of figures 11 and 14-15 are patentably distinct they are not independent and examination would not cause an undue burden on the examiner because both groups include an SRO material. This was not found persuasive because examination of two patentably distinct inventions does cause an undue burden on the examiner even though both groups include an SRO material.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 34-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the elected embodiment of figure 3 for conductive vias, as recited in claims 34-35.

There is no support in the elected embodiment of figure 3 for a silicon-rich insulator of each memory cell is electrically isolated from the silicon-rich insulators of all other memory cells, as recited in claim 4.

There is no support in the elected embodiment of figure 3 for the storage element of each memory cell comprises a fuse, as recited in claim 7.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 26-35, 38-41, 47-49 and 55-57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 18-19, 26-35, 38-41, 47-49 and 55-57 are held to be indefinite as being dependent on non elected claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 11 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Lancaster et al. (5,656,837).

Lancaster et al. teach in figures 8-13 and related text a memory array comprising:

- a) a multiplicity of row conductors 166 and a multiplicity of column conductors 160, the row conductors and column conductors being arranged to cross at cross-points, and
- b) a memory cell disposed at each cross-point, each memory cell having a storage element and a control element coupled in series between a row conductor and a column conductor, and each control element including a silicon-rich oxide insulator (column 14, lines 1-10).

Regarding claim 11, Lancaster et al. teach in figures 8-13 and related text a row conductors are arranged in mutually orthogonal relationship with the column conductors.

Regarding claim 16, Lancaster et al. teach in figures 8-13 and related text a memory cell disposed at each cross-point, each memory cell comprising means for storing data and means for controlling the means for storing data, the means for storing data and means for controlling being coupled in series between a row conductor and a column conductor, and each means for controlling including a silicon-rich insulator.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-10, 26-35, 38-41, 47-49 and 55-57, insofar as in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lancaster et al.

Regarding claim 4, Lancaster et al. teach in figures 8-13 and related text substantially the entire claimed structure, as applied to claim 1 above, except stating that the silicon-rich insulator of each memory cell is electrically isolated from the silicon-rich insulators

of all other memory cells. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a silicon-rich insulator of each memory cell being electrically isolated from the silicon-rich insulators of all other memory cells in Lancaster et al.'s device in order to use the device in an application which requires various types of storage elements.

Regarding claims 5-10, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a control element of each memory cell comprises a tunnel junction, and the storage element of each memory cell comprises an anti-fuse, a fuse, a tunnel junction, a state-change layer, a chalcogenide, in Lancaster et al.'s device in order to use known memory control and storage elements, of which official notice is taken.

Regarding claims 26-35, 38-41, 47-49 and 55-57, Lancaster et al. teach the claimed structures, as recited in claims 26-35, 38-41, 47-49 and 55-57.


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References B-D are cited as being related to memory devices comprising SRO.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ori Nadav whose telephone number is 571-272-1660. The examiner can normally be reached between the hours of 7 AM to 4 PM (Eastern Standard Time) Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Loke can be reached on 571-272-1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



O.N.
9/6/05

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